

REMARKS

By this amendment, claims 1, 18 and 20 are amended to improve their definition of the invention and better define over the cited prior art; allowed claim 4 is rewritten in independent form as new claim 21; allowed claim 6 is rewritten in independent form as new claim 22; allowed claim 7 is rewritten in independent form as new claim 23; new claims 24 and 25 are added to define further aspects of Applicant's invention; and the remaining claims are amended where necessary to change their dependency to reflect changes to the parent claims.

Claims 1 and 20 stand rejected under 35 U.S.C. § 102 (b) as being anticipated by Gortnar, et al. with the comment that "Gortnar shows a hydraulically driven four wheel drive vehicle having a hydraulic motor 20-24 for each wheel. A pump 3, 4, 5 feeds oil to the motors. Loss of traction at one or more wheels is detected and causes a reduction of inflow to the motor at that wheel," and are further rejected under 35 U.S.C. § 102 as being anticipated by Rodgers, et al. with the comment that "Rodgers shows a traction controlled four wheel drive vehicle, a motor 14-22 is provided at each wheel 32-32 loss of traction at each wheel is sensed 40-46, and output of the motor is controlled in response to depicted slip."

In Gortnar (with particular reference to Figure 3 and recognizing that the ports 15 and 16 communicate respectively with the motors 20 and 21) when the wheel controlled by motor 21 begins to slip, motor 21 increases in speed which results in more oil being fed to motor 21 through shutter 52 to keep up with the motor. This increased flow through shutter 52 causes a greater pressure differential across shutter 56 than across shutter 57 so that the Δp in pipes 35/36 is greater than the Δp in pipes 37-38 and the piston 98 moves to the right. As piston 98 moves to the right, channels 47 and 39 are connected and channels 47 and 42 are disconnected which routes pressurized fluid to the left side of piston 82 causing piston 82 to move to the right to throttle the flow of fluid past shuttle 56 in compensation for the slipping wheel.

In Rodgers, the microcontroller 92 compares all available motor speed signals from the sensors 40, 42, 44, 46 and identifies any motors that are exceeding

the speed of the other motors by a predetermined amount according to a program. The pre-programming amount can be a given differential in revolutions per minute or the amount could be stated in relative terms such as 10% or 20% for example. The microcontroller 92 commands solenoid 82 of the flow control valve 84, 86, 88 or 90 corresponding to the offending motor 14, 16, 18 and 20 to restrict proportionally the fluid flow to that motor until its speed once again matches that of the other motors.

It is believed that the original wording of claim 1 (the system includes a drive motor for each wheel and means at each wheel operative to sense a loss of traction) distinguished over both Rodgers and Gortnar. However, in an effort to more clearly distinguish over Gortnar and Rodgers and facilitate prosecution on the merits, claim 1 has herein been amended to require that the system include a device for generating energy, a drive motor for each wheel receiving energy from the generating device, means at each wheel operative to sense a loss of wheel traction, and means operative in response to a sensed loss of the traction at a wheel to modify the output of the generating device in a sense to reduce the torque of the motor driving that wheel to match the traction of the wheel.

It is respectfully submitted that these features are neither taught nor suggested by either Rodgers or Gortnar. Specifically, Rodgers senses loss of traction by deviation in the speed of a particular wheel compared to a predetermined program value and Gortnar senses loss of traction by comparing the volume of the fluid flow to one wheel with the volume of fluid flow to another wheel on the same axle.

With reference to claim 20, this claim as amended requires a generating device for supplying energy at a defined flow rate and defined intensity; a motor at each wheel of the motor vehicle receiving energy from the generating device and driving the respective wheels; means for sensing the intensity of the energy arriving at each motor; and means operative in response to a sensed loss of energy intensity at a motor driving a particular wheel, indicative of a loss of traction at that wheel, to reduce the intensity of the energy supply to that motor from the generating device to a level matching the traction requirement of that wheel. Again, Rodgers deals with a loss of wheel traction by sensing a deviation of the speed of a wheel compared to a

predetermined program value and Gortnar senses a loss of traction by comparing the volume of fluid flow to one wheel to the volume of fluid flow to another wheel on the same axle. Neither satisfies the clear and explicit requirements of claim 20 as now amended.

Claim 18 stands rejected as unpatentable over Gortnar in view of Puett, Jr. on the grounds that Puett teaches diverting motor output to an accumulator when it is not required and it would have been obvious to provide the Gortnar vehicle with an accumulator that receives motor output when it is not required to drive the wheels in order to assist the pump for smooth acceleration of the vehicle. This 103 combination may or may not be proper but in any event, any hypothetical apparatus resulting from the proposed hypothetical combination would not satisfy the requirements of claim 18 since it would not include means for sensing wheel motor torque as now required by claim 18 nor would it include a directional device operative in response to sensed wheel motor torque to direct energy from the energy generating device to the motor and operative in response to a sensed loss of wheel motor torque to direct the motor energy discharged to the energy storage device. As noted, neither Gortnar nor Rodgers detects a loss of motor torque but rather in the one case compare the speeds of two wheels on the same axle and in the other case compare the speed of a spinning wheel to a predetermined program.

Claims 24 and 25 are dependent on claims 20 and 1 respectively and respectively add to these claims particulars of the manner in which the generic invention of the parent claim is applied to a hydraulic system including pumps, hydraulic motors and pressurized fluid.

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This application is considered to be in condition for allowance. If the Examiner feels that other and different claim terminology would better define the invention, she is respectfully requested to call Applicant's attorney at the number shown below in an attempt to agree upon an Examiner's Amendment to allow the application to pass to issue.

Respectfully submitted,

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